

**WAVELENGTH MODULATION FOR OPTICAL  
BASED SWITCHING AND ROUTING**

**ABSTRACT**

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A method and system for modulating an optical signal to encode data therein. The method comprises the steps of directing the optical signal through a filter mechanism having a passband function including a center wavelength, and modulating the center wavelength of the optical signal to establish a difference between the center wavelengths  
10 of the filter mechanism and the optical signal to represent a data value. With the preferred implementation of the invention, a transmit device is used to encode the data in the optical signal, and a receive device is provided to decode the signal. The transmit device modulates the center wavelength of the optical signal to establish a difference between the center wavelength and a predefined wavelength to encode data in the optical  
15 signal, and the transmit device then transmits the optical signal. The receive device receives the optical signal from the transmit device and processes that signal to identify the encoded data.

09564190-092601  
F09260